Maxwell Catmur

[maxcatmur@icloud.com](mailto:maxcatmur@icloud.com) | +44 7507 968831 | 54 Derby Road, London, E18 2PS | [linkedin.com/in/maxwell-catmur-1475a2209](http://www.linkedin.com/in/maxwell-catmur-1475a2209)

# Profile

Product Analyst-focused MPhys Physics candidate based in London. Skilled in requirements gathering, UAT support, data analysis and presentations. Strong interest in fixed income and electronic trading; experienced coordinating cross‑functional teams, drafting technical documentation and using generative AI to accelerate research and summaries.

# Education

**MPhys Physics – University of Warwick October 2022 – July 2026**

**Grade:** First (expected)

* Achieved 85% (Year 1), 89% (Year 2) and 82% (Year 3); modules include high‑performance computing, advanced mathematical methods and statistical physics.
* Investigated metastability of nucleation in the 2D Ising model using dozens of Monte Carlo simulations in MATLAB; co‑authored a short paper with two peers.
* Numerically solved PDEs in C via finite‑difference methods to model industrial heat flow; assessed numerical accuracy and stability.
* Ran 10,000+ N‑body simulations in Python, implementing MEGNO for orbital stability quantification and advanced post‑processing.

**A-levels – Forest School September 2020 – July 2022**

**Grade:** A\*A\*A\*A\*A\* (Maths, Further Maths, Physics, Chemistry, Extended Project)

* Sixth form valedictorian for academic performance.
* Produced a 5000‑word Extended Project on mitigation of climate change (renewables, nuclear, geoengineering), awarded 100%.
* Presented project findings to a cohort of 160+ students and staff, demonstrating strong public speaking and stakeholder communication.

# Work Experience

**Undergaduate Researcher**

Warwick Mathematics Institute **June 2025 – October 2025**

* Modelled finite‑difference methods for wave propagation across 100+ aeroacoustics simulations, assessing numerical dispersion and accuracy.
* Analysed performance of 10 maximal‑order and dispersion‑preserving schemes in MATLAB to inform method selection and computational trade‑offs.
* Validated results against benchmark cases and produced a concise 2‑page poster for internal dissemination.

**Project Manager**

Warwick Aerospace Society **January 2024 – March 2025**

* Led a 12‑member team to design and deliver a proof‑of‑concept UHF satellite ground station within 10 weeks, coordinating technical and procurement activities.
* Chaired 30+ weekly meetings, established four specialised sub‑teams and maintained progress reports to senior leadership.
* Authored 30+ pages of technical documentation, including requirements‑style artefacts and bills of materials to support development and handover.
* Introduced GitHub version control for models and code, improving collaboration and traceability across the project.

**RF Seekers Summer Intern**

MBDA UK **June 2024 – August 2024**

* Contributed to the Modelling and Algorithms team on SAR/AESA image processing; optimised a matched‑filter algorithm using FFT, reducing runtime by 85%.
* Co‑developed a data‑analysis application that enabled six colleagues to rapidly review range–Doppler images, streamlining validation and post‑processing.
* Integrated a mid‑fidelity algorithm as a sanity‑check within the application to support testing and result verification.
* Delivered 50+ commits using professional version control and presented technical outcomes to 20+ colleagues.

**Participant — Fly Your Satellite Workshop**

European Space Agency **November 2024 – November 2024**

* Completed a 5‑day ESA workshop covering systems engineering, requirements practices and ground station communications.
* Attended 20 lectures and practical sessions on requirements gathering, verification and validation processes.
* Collaborated with a 10‑person team to run a rapid CubeSat design sprint, meeting mission requirements under time pressure.

# Projects

**AI CV Generator July 2025 – ongoing**

* Built a CV and cover‑letter generator using OpenAI's API in Python to ingest job descriptions and produce tailored application documents.
* Used Pydantic to enforce structured JSON output and docxtpl to render Word documents; incorporated SQL databases to track applications.
* Applied generative AI for document ingestion and summarisation to accelerate research and produce succinct application summaries.
* Achieved >50% on several ATS‑checker sites and supported successful job‑applications (reported 2 offers after ~200 applications).

# Skills

**Languages**: Python, MATLAB, C, SQL, JSON, HTML/CSS/JavaScript.

**Libraries:** NumPy, SciPy, Matplotlib, openAI, pydantic.

**Tools:** Microsoft Excel, PowerPoint, Git / GitHub, LabVIEW, Origin Pro, Requirements gathering, Change requests, User acceptance testing (UAT), Data analysis, Presentations, Stakeholder management.

**Soft Skills:** Attention to detail, Organisation and process orientation, Clear verbal and written communication, Client‑facing confidence, Teamwork and collaboration, Prioritisation and follow‑through.

**Interests:** Fixed income and electronic trading markets, Generative AI for research, Amateur radio, Tennis.